

U.S. Census Bureau

Semiconductors, Electronic Components, and Semiconductor Manufacturing Equipment - 2008 (REVISED)

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Table 1. Value of Shipments of Semiconductors, Electronic Components, and Semiconductor Manufacturing Equipment by Product Class  
[Value in Millions of dollars]

Product class code	Product description	Year	Value
3332950	Semiconductor machinery	2008	10,063.6
		2007	13,189.6
		2006	12,598.1
		2005	9,728.2
		2004	(NA)
3344111	Transmitting, industrial, and special purpose electron tubes (except X-ray)	2008	792.0
		2007	734.0
		2006	690.0
		2005	651.7
		2004	641.4
3344114	Receiving-type electron tubes, including cathode ray (new and rebuilt)	2008	(D)
		2007	(D)
		2006	216.2
		2005	620.5
		2004	1,049.0
3344117	Electron tube parts	2008	31.2
		2007	35.8
		2006	48.7
		2005	72.4
		2004	77.8
3344120	Bare printed circuit boards	2008	a/ 4,546.9
		2007	4,443.4
		2006	4,932.9
		2005	4,855.5
		2004	4,708.8
3344131	Integrated microcircuits, including semiconductor networks, microprocessors, and MOS memories	2008	r/ 51,584.9
		2007	r/ 49,780.5
		2006	54,962.6
		2005	61,631.2
		2004	60,097.3
3344134	Transistors	2008	a/ 401.3
		2007	a/ 598.5
		2006	679.4
		2005	603.0
		2004	656.0
3344137	Diodes and rectifiers	2008	b/ 457.4
		2007	457.2
		2006	467.4
		2005	371.9
		2004	304.9
334413A	Other semiconductor devices, including semiconductor parts such as chips, wafers, and heat sinks	2008	a/ 9,122.3
		2007	10,175.7
		2006	10,483.1
		2005	8,330.3
		2004	7,247.4
3344140	Capacitors for electronic circuitry	2008	936.5
		2007	945.1
		2006	1,064.1
		2005	1,113.4
		2004	1,184.1
3344150	Resistors for electronic circuitry	2008	c/ 719.8
		2007	b/ 645.3
		2006	660.3
		2005	652.5
		2004	743.9
3344160	Electronic coils, transformers, and other inductors	2008	a/ 1,389.2
		2007	1,393.1
		2006	1,231.4
		2005	1,215.9

		2004		1,115.6
3344170	Connectors for electronic circuitry	2008	b/	3,994.0
		2007		4,189.3
		2006		3,980.0
		2005		3,589.3
		2004		3,415.9
334418B	Printed circuit assemblies, loaded boards and modules (printed circuit boards with inserted electronic components)	2008	a/	19,999.1
		2007	a/	20,381.9
		2006		19,590.8
		2005		20,105.5
		2004		19,565.6
3344191	Crystals, filters, piezoelectric, and other related electronic devices (except microwave filters)	2008		647.8
		2007		689.3
		2006		753.6
		2005		778.8
		2004		654.0
3344194	All other miscellaneous transducers, including electrical-electronic input/output transducers	2008	c/	1,438.9
		2007		1,466.2
		2006		1,322.5
		2005		1,401.3
		2004		1,494.8
3344197	Switches, mechanical, for electronic circuitry	2008		732.2
		2007		662.4
		2006		644.8
		2005		794.2
		2004		715.8
334419A	Microwave components and devices, except antennae, tubes, and semiconductors	2008	c/	1,460.1
		2007	a/	1,540.9
		2006		1,469.6
		2005		1,306.0
		2004		1,326.0
334419E	All other miscellaneous electronic components	2008	b/	4,609.1
		2007	a/	4,831.1
		2006		4,346.4
		2005		4,040.4
		2004		4,158.3

Table 2. Shipments of Semiconductors, Electronic Components, and Semiconductor Manufacturing Equipment  
[Values in thousands of dollars]

Product code	Product description	Year	No. of cos.	Value
3332950	Semiconductor Machinery	2008 2007	(X)	10,063,581 13,189,612
3332950106	Semiconductor wafer processing equipment, thin layer chemical vapor deposition	2008 2007	15	(D) (D)
3332950211	Semiconductor wafer processing equipment, thin layer physical vapor deposition	2008 2007	7	(D) (D)
3332950326	Semiconductor wafer processing equipment, plasma etch	2008 2007	7	(D) (D)
3332950401	Microlithography, including aligners	2008 2007	9	a/ a/
				42,672 37,135
3332950416	Semiconductor wafer processing equipment, thin layer epitaxial growth deposition	2008 2007	3	(D) (D)
3332950421	Semiconductor wafer processing equipment, wet etch	2008 2007	9	a/ a/
				110,259 117,118
3332950441	Ion implantation, including current and voltage ion implanters	2008 2007	4	773,526 1,210,195
3332950456	Wafer processing equipment, pattern generating apparatus	2008 2007	1	(D) (D)
3332950461	Other semiconductor wafer processing equipment	2008 2007	39	3,355,225 4,799,685
3332950500	Parts for semiconductor manufacturing machinery, including packaging equipment	2008 2007	50	1,576,256 1,993,678
3344111	Transmitting, industrial, and special purpose electron tubes (except X-ray)	2008 2007	(X)	792,046 734,022
3344111130	Power and special-purpose electron tubes, except forward wave tubes	2008 2007	12	267,812 263,398
3344111210	Forward wave transmitting and industrial electron tubes (excluding X-ray)	2008 2007	4	363,077 328,608
3344111310	All other transmitting, industrial, and special-purpose electron tubes, (excluding X-ray), including light sensing, light emitting devices, and miscellaneous special-purpose tubes	2008 2007	11	a/ a/
				161,157 142,016
3344114	Receiving-type electron tubes, including cathode ray (new and rebuilt)	2008 2007	(X)	(D) (D)
3344114100	Receiving-type electron tubes, including cathode ray (new and rebuilt)	2008 2007	2	(D) (D)
3344117	Electron tube parts	2008 2007	(X)	31,183 35,841
3344117100	Electron tube parts	2008 2007	7	31,183 35,841
3344120	Bare printed circuit boards	2008 2007	(X)	a/
				4,546,889 4,444,212

3344120105	Single-sided glass printed circuit boards	2008 2007	148	b/ a/	63,415 68,148
3344120110	Double-sided glass printed circuit boards	2008 2007	197	c/ a/	428,515 421,758
3344120115	Multilayer glass printed circuit boards	2008 2007	198	a/	2,567,926 2,495,625
3344120120	Single-sided flex printed circuit boards	2008 2007	36		226,104 257,091
3344120125	Double-sided flex printed circuit boards	2008 2007	41		125,647 98,548
3344120130	Multilayer flex and rigid/flex printed circuit boards	2008 2007	43	b/ a/	257,977 219,485
3344120139	Other printed circuit boards	2008 2007	53	a/ a/	645,041 710,447
3344120145	Receipts for contract work on printed circuit boards (etching, dip-soldering, imprinting, etc.), but not printed board assembly	2008 2007	25	b/ a/	232,264 173,110
3344131	Integrated microcircuits, including semiconductor networks, microprocessors, and MOS memories	2008 2007	(X)	r/ r/	51,584,925 49,780,527
3344131550	Monolithic integrated circuits, digital, nonsilicon	2008 2007	7		(D) 1,204,988
3344131552	Monolithic integrated circuits, digital, silicon	2008 2007	15		3,823,207 3,807,000
3344131574	Metal oxide semiconductor (MOS) field effect transistors, volatile memory DRAMs, 16 megabit and less	2008 2007	5		(D) (D)
3344131575	Metal oxide semiconductor (MOS) field effect transistors, volatile memory DRAMs, greater than 16 Mb, but less than 64 Mb	2008 2007	2		(D) (D)
3344131576	Metal oxide semiconductor (MOS) field effect transistors, volatile memory DRAMs, 64 Mb, but less than 128 Mb	2008 2007	3		140,561 (D)
3344131577	Metal oxide semiconductor (MOS) field effect transistors, volatile memory DRAMs, greater than 128 Mb, but less than 256 Mb	2008 2007	3		304,840 (D)
3344131578	Metal oxide semiconductor (MOS) field effect transistors, volatile memory DRAMs, greater than 256 Mb	2008 2007	5		2,245,936 3,153,292
3344131583	Volatile memory SRAMs, 2 Mb and less	2008 2007	1		(D) (D)
3344131587	Volatile memory SRAMs, Greater than 2 Mb	2008 2007	2		(D) (D)
3344131588	Nonvolatile EEPROM	2008 2007	6		374,490 (D)
3344131589	Other nonvolatile memory	2008 2007	5		88,427 208,399
3344131581	NAND type flash EEPROM	2008 2007	7		1,952,279 830,669
3344131593	NOR type flash EEPROM	2008 2007	4		(D) 760,947
3344131256	Single core microprocessors (MPU)	2008 2007	6	c/	229,697 276,234

3344131257	Multi-core microprocessors (MPU) operating with an external data bus of 16 bits or less	2008 2007	7		729,347 1,766,873
3344131260	Multi-core microprocessors (MPU) operating with an external data bus of 32 bits or more	2008 2007	6		(D) (D)
3344131234	Microcontrollers (MCU) operating with an external data bus of 8 bits or less	2008 2007	4		1,201,484 1,142,694
3344131235	Microcontrollers (MCU) operating with an external data bus of 16 bits	2008 2007	14		2,236,767 (D)
3344131236	Microcontrollers (MCU) operating with an external data bus of 32 bits or more	2008 2007	4	c/	98,723 (D)
3344131943	Complementary BiMOS	2008 2007	7	b/	559,509 646,664
3344131945	Other digital silicon lcs	2008 2007	14		(D) 2,219,730
3344131962	Nondigital silicon monolithic integrated circuits, radio frequency	2008 2007	7		370,366 389,334
3344131903	Nondigital silicon monolithic integrated circuits, analog	2008 2007	21		3,207,731 3,245,220
3344131907	Nondigital silicon monolithic integrated circuits, other	2008 2007	16		3,166,036 3,097,482
3344131918	Hybrid integrated circuits, radio frequency	2008 2007	14	b/	328,472 1,074,816
3344131951	Hybrid integrated circuits, other	2008 2007	34		793,096 928,328
3344131912	Other	2008 2007	28		1,922,205 2,260,128
3344134	Transistors	2008 2007	(X)	a/ a/	401,334 598,541
3344134100	Transistors	2008 2007	21	a/ a/	401,334 598,541
3344137	Diodes and rectifiers	2008 2007	(X)	b/	457,360 457,218
3344137100	Diodes and rectifiers	2008 2007	33	b/	457,360 457,218
334413A	Other semiconductor devices	2008 2007	(X)	a/	9,122,286 10,175,724
334413A105	Solar cells	2008 2007	9		484,235 523,265
334413A110	Photovoltaic modules	2008 2007	8	c/	876,379 563,970
334413A123	Light-emitting diodes (LEDs)	2008 2007	16		(S) 641,318
334413A137	Other light sensitive and light-emitting devices	2008 2007	15		501,156 485,748
334413A140	Thyristors (SCR's, triacs, PNP diodes)	2008	6		76,305

		2007			77,631
334413A150	All other semiconductor devices (tunnel diodes, thermo-electric semiconductor junctions, metal-oxide varistors, solid-state transducers, and special semiconductor devices)	2008 2007	20	a/	390,329 693,134
334413A155	Semiconductor parts, chips and wafers for integrated circuits (IC's)	2008 2007	37		4,464,225 4,862,585
334413A160	Semiconductor parts, chips and wafers for discrete semiconductors	2008 2007	23		413,189 878,076
334413A165	All other semiconductor parts (headers, packages, heat sinks, other accessories, etc.)	2008 2007	40		1,272,559 1,449,997
3344140	Capacitors for electronic circuitry	2008 2007	(X)		936,515 945,139
3344140173	Capacitors	2008 2007	55		(D) (D)
3344140175	Parts for capacitors, including unfinished chips for further finishing and assembly	2008 2007	3		(D) (D)
3344150	Resistors for electronic circuitry	2008 2007	(X)	c/ b/	719,819 645,270
3344150182	Resistors	2008 2007	52	b/ a/	578,955 518,236
3344150184	Parts for resistors	2008 2007	9		(S) (S)
3344160	Electronic coils, transformers, and other inductors	2008 2007	(X)	a/	1,389,170 1,393,127
3344160100	Electronic coils, transformers, and other inductors	2008 2007	174	a/	1,389,170 1,393,127
3344170	Connectors for electronic circuitry	2008 2007	(X)	b/	3,994,030 4,189,329
3344170100	Coaxial (RF) connectors for electronic circuitry	2008 2007	40	b/	456,503 487,618
3344170400	Cylindrical connectors for electronic circuitry	2008 2007	32	c/	954,796 930,178
3344170700	Rack and panel (rectangular) connectors for electronic circuitry	2008 2007	31	a/ a/	306,321 305,832
3344170A00	Printed circuit connectors for electronic circuitry	2008 2007	35		924,466 1,065,372
3344170D17	Other connectors	2008 2007	62	b/ a/	1,050,367 1,066,502
3344170D25	Parts for connectors (connectors shipped but still requiring further manufacture)	2008 2007	27		301,577 333,827
334418B	Printed circuit assemblies, loaded boards and modules (printed circuit boards with inserted electronic components)	2008 2007	(X)	a/ a/	19,999,102 20,289,415
334418B105	Computer and peripheral printed board assemblies	2008 2007	170		4,619,792 5,741,592
334418B110	Communications printed board assemblies	2008	172	b/	3,746,904

		2007		a/	4,095,156
334418B115	Industrial process control board assemblies	2008	211	b/	1,563,854
		2007		a/	1,435,573
334418B120	Instrumentation printed board assemblies (except industrial process)	2008	172	b/	1,741,763
		2007		a/	1,375,414
334418B125	Search and detection printed board assemblies	2008	75	a/	571,019
		2007			465,314
334418B130	Consumer electronics, printed board assemblies	2008	114	b/	1,078,987
		2007			755,222
334418B137	Other printed board assemblies, subassemblies and modules, including office equipment, point of sales and plotter controllers	2008	265	a/	6,676,783
		2007		a/	6,421,144
3344191	Crystals, filters, piezoelectric, and other related devices (except microwave filters)	2008	(X)		647,769
		2007			689,311
3344191127	Filters (except microwave)	2008	38		275,875
		2007			247,326
3344191180	Piezoelectric devices	2008	42	a/	371,894
		2007			441,985
3344194	All other miscellaneous transducers, including electrical-electronic input/output transducers	2008	(X)	c/	1,438,877
		2007			1,466,221
3344194105	Transducers, electroacoustic (sonar, ultrasonic, vibration*, etc.)	2008	17	a/	153,760
		2007			147,623
3344194110	Transducers, accelerometers*	2008	5		207,370
		2007			198,048
3344194115	Transducers, pressure*	2008	27	c/	574,423
		2007			615,580
3344194120	Transducers, strain gauges and other mechanical*	2008	14	b/	115,925
		2007			109,377
3344194135	Transducers, other	2008	23		(S)
		2007		a/	395,593
3344197	Switches, mechanical, for electronic circuitry*	2008	(X)		732,204
		2007			662,406
3344197000	Switches, mechanical, for electronic circuitry*	2008	38		732,204
		2007			662,406
334419A	Microwave components and devices, except antennae, tubes, and semiconductors	2008	(X)	c/	1,460,130
		2007		a/	1,540,920
334419A105	Ferrite, including yttrium garnets, microwave components (circulators, isolators, phase shifters, attenuators, equalizers, limiters, mixers, etc.)	2008	31	c/	221,167
		2007			225,393
334419A110	Attenuators (dummy loads, high and low-power terminations, etc.)	2008	28	a/	152,596
		2007			150,062
334419A125	Reactive microwave components	2008	28	c/	233,584
		2007		a/	235,360
334419A130	Switches, coaxial and waveguide	2008	28	c/	216,633
		2007			224,191
334419A147	Other microwave devices	2008	49	a/	506,315



				2007		444,491
334419A150	Microwave subassemblies, including parametric amplifiers and other solid-state assemblies	2008	21		(S)	
		2007		c/		261,423
334419E	All other miscellaneous electronic components	2008	(X)	b/		4,609,073
		2007		a/		4,855,906
334419E125	Oscillators (except instrumentation and crystal types)	2008	17			128,623
		2007				139,678
334419E130	Static power supply converters for electronic applications, regulated	2008	39	a/		494,102
		2007				530,594
334419E135	Static power supply converters for electronic applications, other (unregulated, variable frequency, ac, dc, converters and inverters, vibrator, etc.)	2008	31			258,652
		2007				274,033
334419E140	Electronic cable harnesses and cable assemblies	2008	195	a/		1,919,188
		2007		a/		2,038,262
334419E155	Magnetic cores	2008	10			118,924
		2007				125,604
334419E180	All other specialized electronic hardware	2008	136	c/		1,689,584
		2007		a/		1,747,735

Table 3. Shipments, Exports, and Imports of Semiconductors, Printed Circuit Boards, and Other Electronics Components  
[Value in thousands of dollars]

Product code 1/	Product description	Manufactures' shipments quantity	Manufactures' shipments (value, f.o.b. plant)	Exports of domestic merchandise 2/	Imports for consumption 3/4/
333295000T	Semiconductor manufacturing equipment	(X)	8,487,325	4,463,964	2,638,944
3332950500	Parts for semiconductor manufacturing machinery, including packaging equipment	(X)	1,576,256	1,786,623	1,218,250
334411100T	Power and special-purpose electron tubes, except forward wave tubes	(X)	428,969	101,151	116,092
3344114100	Receiving-type electron tubes, including cathode ray (new and rebuilt)	(X)	(D)	25,058	29,512
3344117100	Electron tube parts	(X)	31,183	24,579	21,867
3344120100	Bare printed circuit boards	(X) a/	4,546,889	1,389,150	2,173,639
334413000T	Processors and controllers	(X)	(D)	13,724,171	6,080,132
334413100T	Memories, Dynamic read-write random access (DRAM)	(X)	2,769,068	2,227,622	2,337,176
334413200T	Memories, Static read-write random access (SRAM)	(X)	(D)	216,711	323,674
334413300T	Electrically erasable programmable read-only memory (EEPROM)	(X)	(D)	3,077,026	1,478,652
3344131589	Other nonvolatile memory	(X)	88,427	30,864	32,588
334413500T	Memories, other	(X)	8,142,668	181,584	406,014
334413600T	Integrated circuits, other	(X)	9,787,906	6,613,242	8,199,245
3344134100	Transistors	(X) a/	401,334	1,451,161	1,283,215
3344137100	Diodes and rectifiers	(X) b/	457,360	561,405	649,393
334413A105	Solar cells	(X)	484,235	1,011,278	1,252,902
334413A123	Light-emitting diodes (LEDs)	(X)	(S)	509,773	809,749
334413A137	Other light-sensitive and light-emitting devices	(X)	501,156	155,704	395,830
334413A140	Thyristors, SCR's, triacs, and PNP diodes	(X)	76,305	38,632	166,626
334413A00T	Chips and wafers	(X)	4,877,414	4,624,398	904,206
334413A165	All other semiconductor parts (headers, packages, heat sinks, other accessories, etc)	(X)	1,272,559	278,853	217,200
3344140173	Capacitors	(X)	(D)	703,179	807,961
3344140175	Parts for capacitors, including unfinished chips for further finishing and assembly	(X)	(D)	76,889	27,513
3344150182	Resistors	(X) b/	578,955	285,726	685,592
3344150184	Parts for resistors	(X)	(S)	69,206	49,024
3344160100	Electronic coils, transformers, and other inductors	(X) a/	1,389,170	356,360	1,050,739
3344170100	Coaxial (RF) connectors for electronic circuitry	(X) b/	456,503	158,984	325,519
3344170400	Cylindrical connectors for electronic circuitry	(X) c/	954,796	139,949	286,397
3344170700	Rack and panel (rectangular) connectors for electronic circuitry	(X) a/	306,321	53,358	89,068
3344170A00	Printed circuit connectors for electronic circuitry	(X)	924,466	627,872	463,872
3344191180	Piezoelectric devices	(X) a/	371,894	207,623	406,404
3344197000	Switches, mechanical, for electronic circuitry	(X)	732,204	936,105	1,783,105

Footnotes:

1/ For comparison of the North American Industry Classification System (NAICS)-based product codes with Schedule B export codes, and HTSUSA import codes, see Table 4.

2/ Source: Census Bureau report EM 545, U.S. Exports.

3/ Source: Census Bureau report IM 145, General Imports for Consumption.

4/ Value represents the c.i.f. (cost, insurance, and freight) value at port of entry in the United States plus import duties.

Note 1: Some data may not be comparable due to definitional differences between the value of product shipments and the value of export shipments.

Table 4. Comparison of combined North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2008

Combined code	Product code	Product description	Export code 1/	Import code 2/
333295000T	3332950106	Semiconductor manufacturing equipment	8486.10.0000	8486.10.0000
	3332950211		8486.20.0000	8486.20.0000
	3332950326		8486.40.0020	8486.40.0020
	3332950401		8486.40.0030	8486.40.0030
	3332950416		8543.70.2000	8543.70.2000
	3332950421			
	3332950441			
	3332950456			
	3332950461			
3332950500	3332950500	Parts for semiconductor manufacturing machinery, including packaging equipment	8486.90.0000	8486.90.0000
334411100T	3344111130 3344111310	Power and special purpose electron tubes, except forward wave tubes	8540.71.2000	8540.71.2000
			8540.71.4000	8540.71.4000
			8540.72.0000	8540.72.0000
			8540.79.0000	8540.79.0000
			8540.89.0020	8540.89.0020
			8540.89.0040	8540.89.0040
			8540.89.0080	8540.89.0080
3344114100	3344114100	Receiving-type electron tubes, including cathode ray (new and rebuilt)	8540.11.0035	8540.11.1030
			8540.11.0070	8540.11.1040
			8540.11.0080	8540.11.1050
			8540.12.0000	8540.11.1055
			8540.60.0055	8540.11.1065
			8540.60.0080	8540.11.1080
			8540.81.0000	8540.11.2401
				8540.11.2801
				8540.11.3000
				8540.11.4401
				8540.11.4801
				8540.11.5000
				8540.12.1040
				8540.12.1080
				8540.12.2000
				8540.12.5040
				8540.12.5080
				8540.12.7000
				8540.60.0020
				8540.60.0040
				8540.60.0060
				8540.60.0080
				8540.81.0000
3344117100	3344117100	Electron tube parts	8540.91.2000	8540.91.1500
			8540.91.4000	8540.91.2000
			8540.99.0000	8540.91.5000
				8540.99.4000
				8540.99.8000
3344120100	3344120100	Bare printed circuit boards	8534.00.0020	8534.00.0020
			8534.00.0040	8534.00.0040
			8534.00.0050	8534.00.0050
			8534.00.0070	8534.00.0070
			8534.00.0080	8534.00.0080
			8534.00.0085	8534.00.0085
			8534.00.0095	8534.00.0095
334413000T	3344131234	Processors and controllers	8542.31.0000	8542.31.0000
	3344131235			
	3344131236			
	3344131256			
	3344131257			
	3344131260			
334413100T	3344131574	Memories, dynamic read-write random access (DRAM)	8542.32.0015	8542.32.0001
	3344131575		8542.32.0024	8542.32.0020
	3344131576			8542.32.0021
	3344131577			8542.32.0022
	3344131578			8542.32.0023

Table 4. Comparison of combined North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2008

Combined code	Product code	Product description	Export code 1/	Import code 2/
334413200T	3344131583 3344131587	Memories, static read-write random access (SRAM)	8542.32.0040	8542.32.0040
334413300T	3344131581 3344131588 3344131593	Electrically erasable programmable read-only memory (EEPROM)	8542.32.0050	8542.32.0050
3344131589	3344131589	Erasable (except electrically) programmable read-only memory (EPROM)	8542.32.0060	8542.32.0060
334413500T	3344131550 3344131552 3344131943 3344131945	Memories, other	8542.32.0070	8542.32.0070
334413600T	3344131903 3344131907 3344131912 3344131918 3344131951 3344131962	Integrated circuits, other	8542.39.0000	8542.39.0000
3344134100	3344134100	Transistors	8541.21.0080 8541.29.0080	8541.21.0040 8541.21.0075 8541.21.0095 8541.29.0040 8541.29.0075 8541.29.0095
3344137100	3344137100	Diodes and rectifiers	8541.10.0050 8541.10.0060 8541.10.0070 8541.10.0080 8541.40.6050	8541.10.0050 8541.10.0060 8541.10.0070 8541.10.0080 8541.40.6050
334413A105	334413A105	Solar cells	8541.40.6020 8541.40.6030	8541.40.6020 8541.40.6030
334413A123	334413A123	Light-emitting diodes (LEDs)	8541.40.2000	8541.40.2000
334413A137	334413A137	Other light sensitive and light-emitting devices	8541.40.7080 8541.40.8000 8541.40.9500	8541.40.7080 8541.40.8000 8541.40.9500
334413A140	334413A140	Thyristors, SCR's, triacs, and PNP diodes	8541.30.0080	8541.30.0080
334413A00T	334413A155 334413A160	Chips and wafers	8541.10.0040 8541.21.0040 8541.29.0040 8541.30.0040 8541.40.6010 8541.40.7040 8541.50.0040 8541.50.0080	8542.10.0000 8542.21.8005 8542.21.8010 8542.29.0010 8542.90.0000 8541.10.0040 8541.21.0040 8541.29.0040 8541.30.0040 8541.40.6010 8541.40.7040 8541.50.0040 8541.50.0080
334413A165	334413A165	All other semiconductor parts, including headers, packages, and heat sinks, accessories, etc.	8542.90.0000	8542.90.0000
3344140173	3344140173	Capacitors	8532.21.0020 8532.21.0040 8532.21.0050 8532.21.0080 8532.22.0020 8532.22.0040 8532.22.0055 8532.22.0085 8532.23.0020	8532.21.0020 8532.21.0040 8532.21.0050 8532.21.0080 8532.22.0020 8532.22.0040 8532.22.0055 8532.22.0085 8532.23.0020

Table 4. Comparison of combined North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2008

Combined code	Product code	Product description	Export code 1/ 8532.23.0040 8532.23.0060 8532.24.0020 8532.24.0040 8532.24.0060 8532.25.0010 8532.25.0020 8532.25.0030 8532.25.0040 8532.25.0060 8532.25.0070 8532.25.0080 8532.29.0020 8532.29.0040 8532.30.0010 8532.30.0090	Import code 2/ 8532.23.0040 8532.23.0060 8532.24.0020 8532.24.0040 8532.24.0060 8532.25.0010 8532.25.0020 8532.25.0030 8532.25.0040 8532.25.0060 8532.25.0070 8532.25.0080 8532.29.0020 8532.29.0040 8532.30.0010 8532.30.0090
3344140175	3344140175	Parts for capacitors, including unfinished chips for further finishing and assembly	8532.90.0000	8532.90.0000
3344150182	3344150182	Resistors	8533.10.0020 8533.10.0042 8533.10.0057 8533.10.0070 8533.21.0025 8533.21.0045 8533.21.0075 8533.21.0080 8533.21.0090 8533.31.0000 8533.39.0080 8533.40.0080	8533.10.0020 8533.10.0042 8533.10.0057 8533.10.0060 8533.10.0065 8533.21.0010 8533.21.0020 8533.21.0030 8533.21.0040 8533.21.0050 8533.21.0060 8533.21.0070 8533.21.0080 8533.21.0090 8533.31.0000 8533.39.0080 8533.40.8050 8533.40.8060 8533.40.8070
3344150184	3344150184	Parts for resistors	8533.90.0000	8533.90.4000 8533.90.8000
3344160100	3344160100	Electronic coils, transformers, and other inductors	8504.31.2000 8504.31.4035 8504.31.4065 8504.31.6000 8504.32.0000 8504.33.0020 8504.33.0040 8504.34.0000 8529.90.3540 8540.91.2000	8504.31.2000 8504.31.4035 8504.31.4065 8504.31.6000 8504.32.0000 8504.33.0020 8504.33.0040 8504.34.0000 8529.90.3300 8529.90.3600 8540.91.2000
3344170100	3344170100	Coaxial (RF) connectors for electronic circuitry	8536.69.4010	8536.69.4010
3344170400	3344170400	Cylindrical connectors for electronic circuitry	8536.69.4020	8536.69.4020
3344170700	3344170700	Rack and panel (rectangular) connectors for electronic circuitry	8536.69.4030	8536.69.4030
3344170A00	3344170A00	Printed circuit connectors for electronic circuitry	8536.69.5050	8536.69.4050
3344191180	3344191180	Piezoelectric devices	7104.10.0000 8541.60.0025 8541.60.0060 8541.60.0080	7104.10.0000 8541.60.0010 8541.60.0020 8541.60.0030 8541.60.0050 8541.60.0060 8541.60.0080

Table 4. Comparison of combined North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2008

Combined code	Product code	Product description	Export code 1/ 8536.50.7000 8536.50.9020 8536.50.9025 8536.50.9030 8536.50.9035 8536.50.9040 8536.50.9045 8536.50.9050 8536.50.9055 8536.50.9065	Import code 2/ 8536.50.7000 8536.50.9020 8536.50.9025 8536.50.9031 8536.50.9032 8536.50.9033 8536.50.9035 8536.50.9040 8536.50.9045 8536.50.9050 8536.50.9055 8536.50.9065
3344197000	3344197000	Switches, mechanical, for electronic circuitry		

Footnotes:

\*\* HS codes include switches of product class 36433.

1/ Source: 2008 edition, Harmonized System-based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/ Source: Harmonized Tariff Schedule of the United States, Annotated (2008).

Symbols:

(D) - Withheld to avoid disclosing data of individual companies.

(X) - Not applicable.

(NA) - Not available.

r/ - Revised by 5 percent or more from previously published data.

(n.e.c.) - Not elsewhere classified.

(n.s.k.) - Not specified by kind.

(nehp) - Net engine horsepower

(btuh) - British thermal units per hour

(pt.) Part.

- Represents zero.

Estimation symbols - Percent of estimation for each item is indicated as follows:

a/ - 10 to 19 percent of this item has been estimated.

b/ - 20 to 29 percent of this item has been estimated.

c/ - 30 to 49 percent of this item has been estimated.

(S) - Withheld because estimates did not meet publication standards

## Historical Note

The Census Bureau has collected data on selected electronic and associated products since 1961 on survey MA36N, Selected Electronics and Associated Products. In 1985, survey MA36N was divided into three annual surveys which are presently collected as: MA334P, Communication Equipment, Including Telephone, Telegraph, and Other Electronic Systems and Equipment; MA334Q, Semiconductors, Printed Circuit Boards, and Other Electronic Components; and MA334S, Electromedical Equipment and Irradiation Equipment (Including X-Ray).

Beginning in 2005 data for the MA334Q was collected under the title Semiconductors, Electronic Components, and Semiconductor Manufacturing Equipment.

Historical Current Industrial Reports data may be obtained from a Federal Depository Library. To locate a Federal Depository Library in your area, please visit <http://www.gpoaccess.gov/libraries.html>.